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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/510,647

12/27/2005

Thomas W Long

CM-020

3918

34253

7590

04/02/2009

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EXAMINER

COOLMAN, VAUGHN

ART UNIT

PAPER NUMBER

3618

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,647	<b>Applicant(s)</b> LONG, THOMAS W	
	<b>Examiner</b> VAUGHN T. COOLMAN	<b>Art Unit</b> 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 171-195 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 171-180 and 182-195 is/are rejected.
- 7) ☒ Claim(s) 181 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 171-194 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 171 recites the limitation "the vehicle" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 173 recites the limitation "the second at least one energy storage device" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim. Furthermore, the term "energy storage device" is inconsistent with the parent claim terminology of "power storage device".

Claim 191 depends from claim 70, Examiner is taking the claim to depend from claim 171, as claim 70 has been previously cancelled.

The remaining claims are rejected as depending from a rejected base claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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**Claims 171, 174, 175, 182-187, 189, 191, 192, and 195 are rejected under 35**

**U.S.C. 102(b) as being anticipated by Rowlett (U.S. Patent No. 4,233,858).**

**[claim 171]** Rowlett discloses a kit for a drive system, the kit comprising:

an at least one power storage device (22);

at least one motor (18) intermittently energized and de-energized through a control device (20);

at least one weighted drive member (12) coupled to the motor;

an at least one energy recovery device (16) [capable of] returning energy to the at least one power storage device when the weighted drive member is moving;

a drive unit (14) intermittently coupled to said at least one weighted drive member such that the motor drives the at least one weighted drive member which in turn drives the drive unit when the drive unit is engaged[,] and when the drive unit is disengaged from the weighted drive member the drive unit ceases to drive the vehicle but allows the weighted drive member to continue in an energized state and drive the energy recovery device.

**[claim 174]** Rowlett further shows a control input (432) that is coupled to a controller (410) that controls the flow of power from the at least one power storage device to the motor, the controller energizing the motor in response to the control input.

**[claim 175]** Rowlett further discloses the at least one energy recovery device is intermittently coupled to the weighted drive member through an intermittent engagement device mounting a traction wheel (46).

**[claim 182]** Rowlett further shows (FIG 4) the at least one energy recovery device is directly coupled to the motor.

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**[claim 183]** Rowlett further shows the at least one energy recovery device is a tractive member (46) coupled to an energy recovery mechanism (16).

**[claim 184]** Rowlett further shows the energy recovery mechanism is a generator (16).

**[claim 185]** Rowlett further shows the controller intermittently engages said at least one energy recovery device (generator 408) in response to a control input (432).

**[claim 186]** Rowlett further shows the control input is a foot pedal.

**[claim 187]** Rowlett further shows the weighted member is a weighted disk-shaped member (12).

**[claim 189]** Rowlett further shows the at least on[e] energy recovery device further comprises a first energy recovery device (16).

**[claim 191]** Rowlett further shows an intermittent engagement device is a switch (412) with a motor (409).

**[claim 192]** Rowlett further shows the at least one energy recovery device (408) has a field strength (406) and the field strength is adjusted (via controller 410) according to a condition of movement (acceleration or deceleration as outlined in column 4, lines 54+ and column 5, lines 1-12) of the drive system kit.

**[claim 195]** Rowlett discloses a vehicle comprising:

an at least one set of wheels (output to wheels in FIG 1);

an at least one drive system for each of the corresponding at least one set of wheels, the drive system comprising:

a first at least one power storage device (22);

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an at least one motor (18) intermittently energized and de-energized through a control device (20);

an at least one weighted drive member (12) coupled to the motor;

an at least one energy recovery device (16) returning energy to the at least one power storage device when the weighted drive member is moving;

a drive unit (14) intermittently coupled to said at least one weighted drive member such that the motor drives the at least one weighted drive member which in turn drives the drive unit when the drive unit is engaged and, when the drive unit is disengaged from the weighted drive unit, ceases to drive the vehicle but allows the weighted drive member to continue in an energized state and drive the energy recovery device (column 7, lines 45-47).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 172 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rowlett in view of Dooley (U.S. Patent No. 3,493,066).**

[claim 172] Rowlett discloses all of the elements of the claimed invention as described above except for a clutch device coupled to the weighted drive member. Dooley teaches a flywheel powertrain system wherein a clutch device (24) is coupled to a weighted drive member (30, 32) assisting the weighted drive member to continue in an energized state after the drive unit

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is disengaged and de-energized. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Rowlett with the clutch device of Dooley in order to provide the advantage of a safety mechanism to avoid unnecessary damage to the traction motor due to an electronic malfunction.

**Claims 173, 176-180, 188, and 190 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowlett.**

**[claims 173 and 190]** Rowlett discloses all of the elements of the claimed invention as described above except for a second energy recovery device (ERD) or a second power storage Device (PSD). Examiner notes that this is a simple duplication of parts that would yield predictable results when used in conjunction with the disclosed embodiment of Rowlett. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second ERD and a second PSD in order to provide the advantage of increased efficiency of the vehicle.

**[claim 176]** Rowlett discloses all of the elements of the claimed invention as described above except for the controller (410) being a programmable logic unit. Examiner notes that at the time the invention was made, programmable vehicle controllers were common in the art, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize such a controller in order to provide the advantage of modifying the vehicle's operating characteristics for the driving conditions.

**[claims 177, 178]** Rowlett further discloses the controller monitoring at least one sensor input (motor speed 452).

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**[claim 179]** Rowlett further discloses the controller sending at least one output signal (field current amount 406 or 407).

**[claim 180]** Rowlett further discloses the controller sending a motor operation signal (412 or 407).

**[claim 188]** Examiner notes that the common shape of a disk-shaped flywheel is one in which a substantial amount mass is concentrated along an outer perimeter of the member. As such, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize such a shape for the drive system of Rowlett in order to provide the known advantages of the massive perimeter disk-shaped flywheel.

**Claims 193 and 194 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowlett in view of Deane (U.S. Patent No. 3,874,472).**

**[claims 193 and 194]** Rowlett discloses all of the elements of the claimed invention as described above except for during an acceleration condition of the drive system kit the at least one energy recovery device is not powered and during a coasting condition of the drive system kit, the at least one energy recovery device is engaged and adjusted to maximize energy recovery. Deane teaches an energy recovery device (auxiliary generator 30) that is operated in the manner claimed (column 2, lines 1-7), it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Rowlett with the operational characteristics as taught by Deane in order to provide the advantage of increased overall vehicle efficiency.



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***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see attached form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAUGHN T. COOLMAN whose telephone number is (571)272-6014. The examiner can normally be reached on Monday thru Friday, 8am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher P Ellis/  
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